society for social responsibility in science

SSRS Newsletter

Important

NO. 64 AUGUST 1957

WORLD'S TOP SCIENTISTS CONFER IN NOVA SCOTIA; SAY ALL WORKERS IN SCIENCE SHOULD ACT RESPONSIBLY, INFORM PUBLIC, HELP PREVENT WAR

Twenty renowned scientists from any different countries on both sides f the Iron Curtain met July 6 in Nova cotia "to assess the perils to humanty which have arisen as a result of he development of weapons of mass estruction." They issued a statement uly 10 which is of great importance o all who are interested in social esponsibility in science.

The twenty who gathered on the ugwash, N.S., estate of Financier yrus Eaton, included two SSRS mem-ers, both from overseas; Japanese obelwinner Hideki Yukawa and Austrian uclear fusion expert Hans Thirring.

Nobelwinners H. J. Muller and C. F. Powell were also participants.

The other signers of the manifesto ere Eugene Rabinowitch, Paul Doty, alter Selove, Victor Weiskopf and avid Cavers of the United States; . H. S. Burhop and J. Rotblat of ritain; M. L. Oliphant of Australia; rock Chisholm of Canada; A. M. B. acassagne of France; M. Danysz of oland; Chou Pei-yuan of China; S. omonaga and H. Ogawa of Japan; and . F. Skobeltsyn, A. M. Kuzin and . V. Topchiev of the Soviet Union.

John Stuart Foster and Leo Szilard id not sign the statement.

The group came together at the nvitation of Bertrand Russell; the plan was an outgrowth of the Russell-Einstein statement of 1955 (see SSRS Newsletter No. 40, August 1955, for details).

The scientists spent part of their time reviewing the hazards of radioactive fallout. But, wisely, they did not stop with this. They went on to nuclear war, and not merely fallout, is the true danger: "We are all convinced that mankind must abolish war or suffer catastrophe; that the dilemma of opposing power groups and the arms race must be broken," they said.

Beyond this, the scientists raised the question: what is the responsibility of scientists in the face of the dangers which confront humanity?

Their answer is a complex one; they say scientists can help prevent war "by contributing...to public enlightenment on the destructive and constructive uses of science and by contributing...in the formation of national policies..."

But how? What acts by individual scientists should be contemplated?

SSRS members are sure to have opinions as to the adequacy of the manifesto at this point. Its text should be studied and evaluated, then discussed in these columns.

Complete text of the statement is reproduced on pages 2 and 3.

RAMBERG ELECTED SSRS PRESIDENT

Edward Ramberg has been elected President of the Society for Social Responsibility in Science for the coming year, according to results of the Annual Election just received. About one-third more ballots were cast than in the 1956 election, and all winners were elected by decisive margins.

Other members elected were: Vice-President, Eugene Ackerman; Education Division Chairman, Shugera Oae; Occupation Division Chairman, M. Jane Oesterling; Membership Chairman, Esther L. McCandless; Council Members, Priyadaranjan Ray, William F. Burton, Tatashi Kikuchi, Gerhard Herz, Raymond N. Auger, and W. E. Graham; Board of Appeals, Truman Kirkpatrick, H. W. Alexander, Floyd Schmoe, Stuart Mudd and Herbert Jehle.

Ramberg, born in Italy in 1907, was educated in this country, then returned to Munich for his Ph.D. in 1932. He has worked for RCA as a research physicist since 1935, except for a period in Civilian Public Service. He has been SSRS Secretary four years, Vice-President one. He says, "I believe that the SSRS can play a significant role in strengthening the position that a choice of action based on universal ethical considerations has a place in science. The creation of a tradition to this effect is far more important today than either the acquisition of new knowledge or the creation of new devices."

ANNUAL MEETING

The Annual Meeting of the SSRS will be held Saturday and Sunday, September 7 and 8, 1957, at Houston Hall on the campus of the University of Pennsylvania, 3417 Spruce St., Philadelphia, Pennsylvania.

The meeting begins at 9:30 A.M. on Saturday with adoption of the budget. Next come two sessions devoted to reading of papers contributed by members—the first time this has been done at an Annual Meeting.

The program also includes an outside speaker, meetings of Education and Occupation Divisions, and the address of the retiring President.

This Newsletter is published by the Society for Social Responsibility in Science, an organization of scientists and engineers whose purpose, according to its constitution, is "to foster throughout the world a functioning cooperative tradition of personal moral responsibility for the consequences for humanity of professional activity, with emphasis on constructive alternatives to militarism;...to embody in this tradition the principle that the individual must abstain from destructive work and devote himself to constructive work, drawing the line between the two according to his own moral judgment;...to ascertain through open and free discussion the boundary between constructive and destructive work to serve as a guide for individual and group discussion and action..."

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EDITORIAL

BE YOUR OWN ATOM EXPERT

With regard to the effects of ionizing radiation on living matter, there is great need not only for more scientific study of these effects, but also for much wider public understanding of what is already known. Without an informed public, there is little chance for wise governmental policies.

Who is going to tell the public what it needs to know? There just are not enough experts, and therefore some of us who specialize in other fields will have to bone up on radiation effects so that we can participate intelligently in the great debate. This means study. Some helpful recent published material would include:

The Hazards to Man of Nuclear and Allied Radiations. Prepared by the Medical Research Council of Great Britain. 128 pp. June 1956. Published by Her Majesty's Stationery Office. May be purchased from British Information Services, 30 Rockefeller Plaza, New York 20, for $1.04 postpaid.

The Effects of Nuclear Weapons. Edited by Samuel Glasstone. Prepared and published by the U. S. Department of Defense and the U. S. Atomic Energy Commission, June 1957. (Released July 12). Recommended by the Federal Civil Defense Administration as "the definitive source of information". 579 pp. Obtainable from the Superintendent of Documents, Washington 25, D.C. for $2.00.

The Biological Effects of Atomic Radiation: A Report to the Public. 32 pages. And:
The Biological Effects of Atomic Radiation: Summary Reports. 108 pages. Both documents, from a study by the National Academy of Sciences, released June 1956, may be obtained free by writing to National Academy of Sciences--National Research Council, Publications Office, 2101 Constitution Ave., Washington 25, D.C.

Radiation: What It Is and How It Affects You, by Jack Schubert and Ralph E. Lapp. New York: The Viking Press, 1957. 314 pp. $3.95.

The Schweitzer Declaration of Conscience and Related Documents, a pamphlet prepared by the *Saturday Review,* contains the full text of the statement issued April 24, 1957, by Dr. Albert Schweitzer; a reply to Dr. Schweitzer by AEC Commissioner Willard F. Libby; articles commenting on Libby's statement by Harrison Brown and John Lear; and an article by Norman Cousins. Obtainable in quantity from Saturday Review, Inc., 25 W. 45th St., New York 36, N.Y. 10¢ each.

And--scheduled for publication about August 15--the 5000-page transcript of the elaborate hearings on fallout held in June 1957 by the Joint Congressional Committee on Atomic Energy, plus a summary for general public consumption. The conditions for obtaining these documents are not available as we go to press.

This Newsletter will publish reviews of some of the above documents in future issues. --*T.K.*

TEXT OF STATEMENT B

At the invitation of Lord Russell, and through the gen erous hospitality of Mr. Cyrus Eaton, a group of scientists drawn from about ten nations and widely representative o different political, economic and other opinions, met in Con ference at Pugwash, Nova Scotia, between July 6 and 11 1957. Mr. Y. Shimonaka and others also provided valuable assistance.

The meeting originated in the suggestion contained in the Russell-Einstein appeal, that scientists should meet to asses the perils of humanity which have arisen as a result of the development of weapons of mass destruction. Two years have passed since that statement was issued but the dangers remain In fact, the stockpiles of nuclear weapons have increased, new nations have joined the ranks of those producing weapons or trying to produce them, whilst serious misgivings have been expressed as to whether the continued testing of such weapon may not result in damage to the population. The genera belief that a full-scale nuclear war would bring universal dis aster upon mankind, and the recognition that it is technicall possible for both the two great contending forces to visit an desired degree of destruction upon an enemy, as well as cer tain political developments, have created an atmosphere i which it was possible for us to meet, and to discuss dispassion ately, many important and highly controversial issues.

Tried to Be Impartial

The international problems which have arisen as a resul of the development of atomic energy are of two kinds, tech nical and political. A gathering of men of science can discus with special competence only the scientific and technical im plications of atomic energy. Such discussion, however, can b fruitful only if it takes into account the political problem which are the background to international negotiations. Th signatories of the Russell-Einstein appeal affirmed their inten tion to say nothing which might seem to favor one rather tha the other of the two great groups of powers into which th world is divided. In attempting to formulate the conclusion which followed from our discussions, we too have tried t avoid any exacerbation of the differences between nation which might follow, for example, from emphasis on technic considerations unwelcome to one or other of the two gre powers.

Men of science are now well aware that the fruits of the labors are of paramount importance for the future of ma kind, and they are thus compelled to consider the politic implications of their work. Their opinions on politics are diverse as those of other men. These facts make it difficult f a conference such as the present to issue an agreed statemen on matters which are controversial. The discussion of su issues, however, allowed the points of difference and the are of agreement to be defined, and led to a measure of mutu understanding of the opinions of one another.

The main work of the meeting was centered round thr principal topics: (1) The hazards arising from the use atomic energy in peace and war; (2) problems of the contr of nuclear weapons; and (3) the social responsibility of scie tists. Three committees were established to give detailed co sideration to these topics. Their reports to the conference a given in the statements appended to this document, but t principal conclusions bearing on the hazards of atomic ener may be briefly summarized as follows:

Uneven Fallout the Serious Danger

Committee I on nuclear hazards, made an independe assessment of the effects of the nuclear tests carried out hith to. From the details given in the appendix, it may be seen th the hazard, compared with others to which mankind is subj from natural causes, is small. Nevertheless, because of t world-wide distribution of fission products, and the fact th some areas may be subject to effects much above the avera close attention to the dangers should be maintained, especia if tests of bombs which give large radioactive fallout contin to be made.

The committee also considered the hazards arising from peacetime use of industrial atomic power, or the application radiations in medicine and industry. Although these haza must be viewed in the light of the great benefits which w flow from such applications, means of greatly reducing attendant hazards are available and should be widely adopt

War Would Leave No Country Unscathed

The above mentioned estimates of the hazards which ha

Y LEADING SCIENTISTS

arisen from test explosions permitted a closer examination to be made of the probable consequence of an unrestricted nuclear war. This examination led to the unquestioned conclusion that a general war with nuclear weapons would indeed represent a disaster of unprecedented magnitude. The radiological hazards would be thousands of times greater than those due to the fallout effects of test explosions. In the combatant countries, hundreds of millions of people would be killed outright, by the blast and heat, and by the ionizing radiation produced at the instant of explosion whether bombs of the so-called "clean" or "dirty" kind were employed. If "dirty" bombs were used, large areas would be made uninhabitable for extended periods of time, and additional hundreds of millions of people would die from delayed effects of radiation from local fallout, some in the exposed population from direct radiation injury, and some in succeeding generations as a result of genetic effects. But even countries not directly hit by bombs woulld sufter through global fallout, which, under certain conditions, might be of such intensity as to cause large-scale genetic and other injury.

Arms Limitation Not Enough

It is against the background of the fearful consequences for humanity of a general war with nuclear weapons that the conclusions of Committee II, which considered problems of control, must be viewed. The principal objective of all nations must be the abolition of war and the threat of war hanging over mankind. War must be finally eliminated, not merely regulated by limiting the weapons which may be used. For this purpose, it is necessary to reduce tension among the nations; to promote mutual understanding among the peoples; to strive for the ending of the arms race; and to provide an adequate control system so as to give substantial protection, and permit the development of mutual confidence.

One of the greatest difficulties in international affairs in recent years has sprung from the fact that in a period of delicate strategic balance, even secondary questions acquire strategic significance; in such a situation, they are rarely subject to agreed solutions because any particular solution appears to be to the strategic advantage of one rather than another of the powers. We believe that it is unrealistic to depend upon any sudden increase in mutual confidence and that it is more likely to grow from small beginnings. In this situation, even small agreements covering limited fields could be of great importance.

Greatest Peril Now in Small Wars

In the present circumstances, we believe that the greatest peril comes from the possibility that a war might break out between two smaller nations, that Russia and America might intervene militarily on opposite sides, and that such a war might be fought by using atomic bombs in combat. We believe it would be very difficult to limit a local war of this kind—particularly if it is fought with atomic weapons in the tactical area—and that what may start out as a local war may end as a general atomic catastrophe. In order to avert this danger, political settlements aimed specifically at eliminating the risk of the outbreak of a local war between smaller nations are needed.

The conclusions of Committee III on the responsibilities of scientists state our common conviction that we should do all in our power to prevent war and to assist in establishing a permanent and universal peace. This we can do by contributing to the task of public enlightenment concerning the great dilemma of our times; and by serving to the full extent of our opportunities, in the formation of national policies. The Committee gives a statement of beliefs and aspirations suitable for scientists in the modern world.

Finally, we should like to give expression to the high degree of unanimity we have found among all the members of the Conference on *fundamental aims*. We are all convinced that mankind must abolish war or suffer catastrophe; that the dilemma of opposing power groups and the arms race must be broken; and that the establishment of lasting peace will mark the opening of a new and triumphant epoch for the whole of mankind. We earnestly hope that our conference may make a modest contribution to these great aims.

Subcommittee I Report

The effects of radiation, from nuclear tests, from peaceful applications, and from the possible wartime use of nuclear weapons, have been the subject of much concern and study. We have felt it desirable at this meeting to consider the available facts bearing on these problems.

With regard to the effects of nuclear testing, we have found that separate calculations carried out independently in Great Britain, Japan, the USA, and the USSR have yielded results in good agreement with one another on the amount of fallout and on its effects.

A principal effect is due to strontium-90. If, as some evidence indicates, the production of leukemia and bone cancer by radiation is proportional to the dose, even down to very small doses, then we estimate that the tests conducted over the past six years will be responsible for an increase of about 1% over the natural incidence of leukemia and bone cancer during the next few decades. Over the next 30 years, this increase would amount to about a hundred thousand additional cases of leukemia and bone cancer. The correct numbers may be several times larger or smaller. These additional cases could, however, not be identified among the 10,000,000 or so normal cases of the same diseases.

The Effect on Future Generations

A second principal effect of global fallout consists of genetic mutations. We estimate that these will cause serious injury to about as many individuals as those in whom leukemia or bone cancer will be produced by the strontium-90. However, the genetic effects from a given amount of fallout, unlike the effects of strontium-90 will be scattered over many generations.

Peacetime uses of radiation, such as X-rays in medicine, or nuclear power production, will also be responsible for the delivery of radiation to large numbers of people. Genetic and long-term somatic effects will result from this radiation, in amounts depending on how much radiation is received by the reproductive cells and by other parts of the body.

Medical X-Ray Worse Than Fallout

It is important, in evaluating the effects from various sources of radiation, to try to put them in proper perspective. For example, the radiation received by the average individual from medical X-rays, is in countries of more highly-developed techniques, considerably greater than the fallout radiation from tests at the recent rate. This (does not mean), however, either that we should stop using X-rays, or that we should not be concerned about fallout from tests. Great benefits to man are obtained from the use of X-rays, as well as from the industrial use of nuclear energy. The new awareness concerning the deleterious effects of radiation is leading to greatly improved techniques in the use of X-rays, and to more rigorous precautions in the application of nuclear energy. By these means it will be possible to reduce the doses received from medical and industrial radiation to levels that are justifiable in the light of the benefits obtained. It is useful to remember that modern industrialized society involves many developments with harmful side effects, as in the case, for example, of the fumes from automobiles and from industrial establishments. Accurate evaluation of the damage caused in this way has not been made but, even if it should turn out to be considerable, no one would expect to stop using all automobile engines or noxious industrial processes.

In Many Areas Heavier Than Average Fallout

With regard to fallout effects from tests, it should be recognized that the effects are global, and exerted upon citizens of all countries, regardless of whether they or their governments have approved the holding of tests. In these circumstances, the usual criteria as to whether a given hazard is justifiable cannot be applied. According to the figures given above, many individuals will be affected, although the numbers represent only a small percentage increase over naturally occurring effects, and it will not be possible to say, for example, which specific case of leukemia is due to fallout and which is a natural case. It should also be realized that appreciable areas of the world will experience higher than average effects from fallout.

We now come to the consideration of the effects of a nuclear war. It cannot be disputed that a full scale nuclear war would be an utter catastrophe. Its effects would be thousands of times greater than the fallout effects from nuclear tests. In the combatant countries, hundred of millions of people would be killed outright, by the blast and heat, and by the ionizing radiation produced at the instant of explosion. If so-called "dirty" bombs were used, large areas would be made uninhabitable for extended periods of time, and additional hundreds of millions of people would probably die from delayed effects of local fallout radiations, some in the exposed population from direct radiation injury and some in succeeding generations as a result of genetic effects. Even countries not directly hit by bombs would suffer through global fallout, which under certain conditions might be of such intensity as to cause large-scale genetic and other injury.

Subcommittee 2 Report

In this age of atomic weapons, the objective of all nations must be the abolition of war and even the threat of war from the life of mankind. War must be eliminated, not merely regulated by limiting the weapons to be used. The advancement of this objective calls for:

1. The lessening of tensions among nations and the promotion of mutual understanding among their peoples.

2. The ending of the arms race.

3. The provision of reasonable safeguards in the arms control system to give substantial protection and build up mutual confidence. The development of atomic armaments has now gone so far that a completely effective and reliable control system appears to be no longer possible.

4. The initiation of a step-by-step process to develop as satisfactory a set of controls and safeguards as practicable. The prompt suspension of nuclear bomb tests could be a good first step for this purpose.

Subcommittee 3 Report

It is our conviction that the paramount responsibility of scientists outside their professional work is to do all in their power to prevent war and to help establish a permanent and universal peace. This they can do by contributing to the full measure of their capabilities to public enlightenment on the destructive and constructive potentialities of science and by contributing to the full extent of their opportunities in the formation of national policies.

To this aim, scientists of all countries without regard to political and economic systems can dedicate themselves because they share certain common beliefs. Following are some of them:

1. With the penetration of science into the world of atomic nuclei, humanity has entered a new epoch.

The Political Responsibility of Scientists

2. The developments of science and technology have paramount importance for the future of all mankind. This imposes upon scientists the obligation to be more actively concerned with matters of public policy, and upon political leaders, the duty to take fully into account the scientific and technological facts.

3. As consequence of man's mastery of nuclear forces, a war can now cause immeasurable damage to mankind.

4. If the achievements of science are rationally employed, they could enormously increase the well being of all men.

5. Scientific and technical progress is irreversible. With humanity basing much of its technological progress on the manipulation of nuclear forces, it is of paramount importance that war be made permanently and universally impossible.

6. In the past, nations have often resorted to force in the quest for natural resources and fruits of labor. These methods must now be replaced by a common effort to create wealth for all.

7. The security of mankind demands that no section of it shall have the capacity to destroy any other. The developments of science and technology tend to break down barriers between nations and, in effect, to unify mankind.

"Co-Existence" Not Just A Temporary Matter

8. The need of all parts of mankind to cooperate in the growth of the total sum of human knowledge and wealth, despite ideological and other differences which may divide them, is permanent and not a matter of temporary "coexistence" of different political or economic systems.

9. Tradition tends to place the emphasis in the education of youth on separate ideals of single nations, including the glorification of wars. The atomic age urgently requires a modification of these traditions. Without abandoning loyalty to national heritage or fundamental principles of the different societies, education must emphasize the fundamental and permanent community of the interests of mankind in peace and cooperation, irrespective of national boundaries and differences in economic or political systems.

Science Requires Absolute Freedom from Dogma

11. Science develops most effectively when it is free from interference by any dogma imposed from the outside, and permitted to question all postulates, including her own. Without this freedom of scientific thought, and the freedom to exchange information and ideas, full utilization of the constructive possibilities of science will not be possible.

LETTERS

To the Editor of the Newsletter:

My reply to Victor Paschkis' challenge in July's Newsletter, to specify my opinion on "What, in my opinion, should the SSRS do?" is simply to request our group to be what her name says. In his letter, Victor traces...how the SSRS came into being ...and how it was decided to form an independent group rather than pacifist divisions within existing societies.

However, our name of "SSRS" goes beyond that original purpose, since it calls for social responsibility,not merely for pacifism in science. This contradiction, our SSRS suffers from to this day. We still are a stagnant, if respected, group, with a few doers and some inert members and might-be-members. We have been a group without punch, appeal and growth in the large number of scientifically and technically skilled people... Members may wish to know why at least one person rejects the present SSRS program and how there might be substituted a program actually fitting our name.

This opinion, however, implies two domains of responsibility, and not merely one, as in the past. Responsibility, like charity, begins at home. We scientific and technical people are to act responsibly among ourselves first, during our education and in our occupation, before we try to act responsibly toward the community to which we belong.

Unfortunately, we share the fate of our contemporaries that our wholesomeness as individuals has foundered on the rocks of Western civilization. Or, to quote Max Born, "It is only a manner of speech to say that the atom has become dangerous,...The source of the danger is in all of us, because it is the weakness and passion of ordinary human beings." Our peculiar fate now thrusts us, who are scientific and technically trained people, into the limelight. Suddenly we realize that we fall short of the mark, that we are not ready, that nothing in our professional background has prepared us for the challenge and opportunity of social responsibility.

While our onlooking, unhappy fellowmen wait for us to grow to be equal to our calling, and to mature, I would in the true scientific vein of free inquiry, like to meet and sit down with my fellow scientists and technicians, and to do something about this our essential shortcoming: first, to formulate the dictates of our consciences, and then to present their living example.

Victor Paschkis holds that "in the training of scientists, a conscious effort is made to divert science from moral or social questions," and then on religious grounds, in the Quaker sense, he interprets the two tenets of constructive use of science and of the individual's duty to discharge and not to delegate his responsibility.

But the "constructive use" approach seems to be premature today, as shown, e.g., by Albert Einstein's letter to Franklin D. Roosevelt. Nevertheless, and for this very reason, there is now room and a legitimate *raison d'etre* for SSRS to continue alongside FAS (of which some of those discussing here, are also members.) The SSRS, after a new departure, will live and grow because she will have something of her own worthwhile fighting for and will be our conscience, as the FAS is the scientists' arm...It will take the two groups to establish and test the code of ethics for our profession to come.

The SSRS's struggle now for our informal scientific integrity in our own professional life will provide the stamina for the other half of SSRS's program proposed here, namely the urgent codification of our common responsibility to our fellow men.

Herbert M. Meyer
276 Massachusetts Ave.
Arlington 74, Mass.

To the Editor of the Newsletter:

Whether or not SSRS members themselves take a pacifist position, I think we have a moral responsibility to advocate the examination of a fully pacifist policy for any and all governments of the world. My reasons are these:

1. Military defense in terms of actual large-scale war has become an absurd concept, because the values we wish to defend will be destroyed as far as any concrete historical vehicle for them is concerned.

2. The deterrent policy does not handle any problems of defense in fringe areas, from small-scale wars, subversion, etc. At the same time it requires the limit of our scientific ability, and the immoral focussing of attention on means of utter destruction.

3. Any real dangers to the world arising from communist or other totalitarian expansion pressures must nevertheless be faced with an adequate program of defense.

4. Widespread fears even of unrea or unlikely dangers (such as a Hitle like mad attack on a poorly arm nation) must also be faced, for fea control us all and are perhaps t biggest obstacle to moral and ration progress.

5. Any new possibilities for pr viding defense against real dange and giving security that will rel exaggerated fears must surely be e amined. The situation is far mo desperate than the threat of cance for instance, and the moral obligati to examine all hopeful lines of atta is therefore much stronger.

Commander Sir Stephen King-Hal retired British Naval officer (cu rently a political commentator) wro in his own newsletter last April a detailed argument calling for Royal Commission to study a pacifi or non-violent defense policy. H article also appeared in *Peace Ne* for May 10.

There is plenty of evidence th such a policy might have a considerab smaller risk in many ways than t present reliance on arms. We a shirking our duty if we do not strong advocate a similar governmental r search project in the U.S.A., and any other country where defense a serious problem.

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Please send me full information on membership in the Society for Social Responsibility in Science, and the procedure to be followed by those wishing to become members. I understand that returning this coupon places me under no obligation.

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EMPLOYMENT

SITUATIONS OPEN

Manufacturer of industrial chemica is seeking a person experienced solid state devices, semiconducto and infrared devices to relate t new developments in this field the company's product lines and develop possible applications. Rac sex or nationality no barrier. L cation Northeastern U.S.

Assistant Engineers with M.E. or E. degrees needed by a consumers' testi organization. Starting salary f person in upper 25% of class is $5 per month.

Mechanical or Electrical Engine (advanced degrees or studies desi able) to supervise appliance testi for a consumers' testing organizatio Salary $15,000 per year for ful qualified candidate.

Southeastern college of engineeri has job openings in health physi and electrical engineering suitab for SSRS members.

Send replies to these ads to the SS Occupation Division Chairman, Norm Polster, at his new address,
855 Woods Road
Southampton, Pa.